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AUTHOR Castle, Shari; Arends, Richard I.
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ABSTRACT

Analysis of conversations among teachers and researchers who are participants in a national computer network, the School Renewal Network, provides insights into cooperative learning and its implementation, as well as the role that collegial electronic networks can play in school reform. This paper presents data collected from a small group discussion among participants representing four of the seven elementary, junior high, and high schools in the network. The paper describes what has occurred in the schools represented, reports changes in thinking and practice, and discusses the Network's contribution and impact. In addition, across-the-board issues identified by schools that participated in a cooperative learning session on the network are outlined. Analysis of the data collected indicates that: (1) use of cooperative learning in participating schools increased between 1988 and 1992; (2) instruction during this period has moved toward a more active, student-centered activity; and (3) teachers' knowledge and expertise about cooperative learning have increased. Issues important to network teachers have been: developmentally appropriate implementation, formation of cooperative learning groups, unequal influence of group members, rewards and assessment, curriculum coverage, and need to detract schools. It is also evident that the School Renewal Network provides a paradigm for dissemination that is very different from traditional knowledge utilization and dissemination models. (IAH)

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The Practice of Teaching: Cooperative Learning

by

Shari Castle
NEA National Center for Innovation

Richard I. Arends
Central Connecticut State University

with

Bonnie Dill, Wells Junior High School

Marge Harris, Martha's Vineyard Regional High School

Yolanda Hernandez, Longfellow Elementary School

John Hollifield, Center for Research on Effective Schooling for Disadvantaged Students, Johns Hopkins

Mike Pittard, Clinton Elementary School

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"None of Us is as Smart as All of Us:" Learning from and Contributing to Practice through an Electronic Researcher-Practitioner Community
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Focus Questions: Cooperative Learning and Networking

Cooperative Learning was one of the very first topics on the School Renewal Network when it began in 1988. Several schools had identified cooperative learning as one of their improvement priorities, were beginning to implement cooperative learning in their schools, and had questions about their implementation strategies. While not the most voluminous topic, it has been one of the most consistently discussed and, because it has been extensively researched, one in which a significant amount of researcher-practitioner interaction has occurred. Cooperative learning is being used rather extensively in Network schools.

Observing conversations about cooperative learning among teachers and researchers on a national computer network provides interesting insights into cooperative learning and its implementation, as well as the role that collegial electronic networks can play in school reform.

As described earlier, the primary data for this paper were collected in a small group discussion of four teachers, two researchers, and one NEA staff member (this group is referred to throughout the paper as "the discussion group" and the members as "the participants." All quotes are taken from discussion group notes and audiotapes, unless otherwise noted). The paper follows the outline of the questions, first describing what has occurred in the schools represented in the discussion group, then reporting changes in thinking and practice, and finally discussing the Network's contribution and impact. In addition, a brief review of Network papers identifies issues from across all

the schools that participated in the cooperative learning session on the Network.

1A) What has happened in regard to using cooperative learning?

Longfellow. For Longfellow elementary school, the challenge was to make cooperative learning a reality with very young children and to help them reach new cognitive and social heights. Their questions involved: Is cooperative learning easier in the higher grades? How do you do cooperative learning in kindergarten? No particular strategies for kindergarten were found, and they wondered if cooperative learning research applied to kindergartners. In a Network paper, they read that student teams need to learn social skills in order to do cooperative learning. One participant commented that research on prosocial behavior in young children would be helpful here, but had not been reported on the Network. The broader question was what cooperative learning strategies are developmentally appropriate at different levels? John, one of the researchers commented that kindergarten is a special case which has not been well researched. Mike reported noticing a big difference in cooperative learning between first and second grade. Marge described going to a cooperative learning workshop and found the elementary strategies inappropriate for high school students. The discussion group believed this was an important topic for Network discussion, pulling in people from different levels.

The Longfellow faculty's next series of questions involved how to get cooperative team learning pairs started and what to do

if one member dominated.

> "I finally got good pairs, then wondered how long to keep them. One girl has such low social skills, no one wants to work with her."

John suggested making them an extra part of a team, so that the team could still be productive and the slow one could learn from the others.

The Longfellow faculty developed problem-solving questions and strategies on which the cooperative learning groups could work. With kindergartners, they found that a complete analysis of the cooperative task must take place prior to the cooperative learning task itself. They have found that if they taught each component of the social and behavioral skills first, then the students would do well in cooperative groups. They also found that cooperative learning contributed to language development, because non-contributors in the large group become contributors in their small groups. Participation in cooperative learning developed confidence in using oral language which was particularly important for this school's large bilingual population.

Clinton. Clinton elementary school's cooperative learning experience was a very different one. A group of teachers from this faculty completely restructured the second grade reading program to make cooperative learning an integral part of it. In response to a Network question, John Hollifield put a brief description of CIRC materials on the Network and offered then to interested schools. Mike requested the second grade set, became

excited because the materials "fit" what they were trying to accomplish, and asked for more materials until he had received them all. He used the materials to rewrite basal reading lessons in a cooperative learning context, adding whole language and comprehension strategies. They completely threw out the workbooks. Mike reported that they still use the basal, but with better teaching strategies. He said that the cooperative learning materials he received were teacher-oriented, not demeaning, and allowed for teacher creativity in their use.

> "I read and soaked it up for 2-3 months. I talked with other teachers. I had a good student teacher, so I used the extra time for this. We restructured the whole second grade reading program integrating the basal, whole language, and cooperative learning. We tore up the basal and reorganized it into literature genres such as fairy tales. We used CIRC strategies to learn everything about fairy tales. The kids did peer-edited writing. We didn't need to track the kids anymore, although we had to work with parents on it."

Interestingly, this teacher never asked a substantive question about cooperative learning on the Network. John observed that:

> "the teacher recognized the potential, had sense and intelligence, and followed through."

Mike got substantive questions answered by "lurking" on the Network; all the problems he encountered were discussed by others (quality, group size, assessment). The Network created an environment where he could find appropriate materials and suggestions for implementation.

Currently, second grade teachers have customized and individualized the reading program. They view it as a resource, not a mandate. They found that it is important not to abuse

cooperative learning; not to use it for everything or all of the time. Balance, variety, and appropriateness became important criteria for them in selecting instructional strategies. John noted that cooperative learning is not a cure for bad curriculum; that is does not help students to teach the wrong thing the right way. Mike stated that his experience illustrated a critical issue, teacher's professional judgment versus prescription teaching, and that the Network facilitated the former.

Wells. The Wells Junior High teacher in our discussion group was in her first of teaching when she asked the principal for assistance in setting instructional goals and learning new models. The principal suggested cooperative learning. Bonnie developed an interdisciplinary science curriculum using cooperative learning strategies, particularly TGTS. The principal served as her coach. One problem Bonnie faced was how to cover the curriculum.

> "I can cover more with a lecture, but what about student understanding?"

Another was how to grade.

> "What is the role of group responsibility? How to reward? From each other? From the teacher? I found I had to help kids recognize rewardable behavior."

Another issue was grouping of students and dealing with kids who were not functioning well in their group. Another involved how to assess cooperative skills.

> "How to assess skills AND content, since personal differences exist in cooperative skills as well as content knowledge. I learned to grade individual work and reward group work."

Another issue was how to explain to parents that cooperative learning required less homework and how to assist them in helping their children with new kinds of homework.

Other Wells faculty members have successfully used cooperative learning in 6th grade math.

Martha's Vineyard. Marge is a social studies teacher at Martha's Vineyard Regional High School. She had been using cooperative learning strategies in her classes and it had spread to other social studies teachers, as well. They had students coming up from junior high who were experienced in cooperative learning, making implementation somewhat easier.

While cooperative learning led to more heterogeneous grouping in their classrooms, a problem remained with the school's tracking system. There was more heterogeneous grouping in some classrooms, but not across the school. The high-track students (and their parents) were worried about grades and SAT scores. Lower-track students were afraid of letting others see how low their skills were. Giving individual grades plus a grade for "doing your best through the struggle" worked for Marge in cooperative learning groups. For Marge and some of her colleagues, other initiatives have resulted from the use of cooperative learning and getting ideas from the Network: portfolios are being used and shared; heterogeneous grouping is occurring in classrooms; critical thinking essays are being written; team teaching is being discussed; discussions have increased on educational approach, method, and ideas; research is available to stimulate the teachers.

2B) How has the Network community contributed?

Assistance and Problem-Solving. One of the primary ways the Network contributed to the use of cooperative learning in these schools was to provide a forum for assistance and problem-solving, particularly once implementation had begun.

> "We didn't use [the Network] until we had a problem."
>
> "When I asked a question on the Network, it was one that couldn't be answered by my team."
>
> "Some of the answers are hard to nail down, but people try."
>
> "What do you do when kids don't participate in groups? The 'Odd One Out' papers helped. Have them work for small periods of time and choose their participation."
>
> "Research concentrated on cooperative learning practices, but not what it takes to do it. It takes comfort-level, organization, style, noise tolerance, and the ability to help kids be self-reflective."
>
> "A real use of the Network is, 'Here's my problem, what have you done? Here's what research says, how have you dealt with it? What's worked and what hasn't?'"
>
> "Network interaction is facilitating current use [of cooperative learning] by addressing problems and suggesting further innovations. Current use is producing good results based on testimonials. Network interaction has progressed from a general discussion about what is cooperative learning to a more complete discussion about the specifics of cooperative learning processes used in classrooms. Fairly common is a school using cooperative learning that improves its use and solves some problems based on assistance from networkers, or expands its use, and finds positive effects on students and teachers."

These statements underscore the importance of teachers having a place to go to discuss research, implementation, and practical strategies. In our previous research on the use of the knowledge base to improve schools, we found access to research a problem; but what to do with the research after it had been accessed was an even bigger problem (Castle, Johnson, &

Livingston, 1990). The Network filled this gap for these participants.

Resources. Resources described on the Network were helpful, particularly to the extent that they were easily accessible or available. This illustrated the importance of immediate access to resources, but it also supported the use of an electronic community for access to the knowledge of other people.

> "Information from resources suggested on the Network [has contributed], if you have time to find them."

> "Good resources. However, my concerns are immediate. By the time I get the resources, I'm beyond it."

Reinforcement. Several comments indicated the importance of having experience reinforced and practices supported. This was important to the participants not as justification for continuing current practice, but as positive feedback and, for some, a new awareness that research supported their practice.

> "I teach the best I know how, but I don't know everything. It's a relief to know that what I'm doing is what research says is good for kids."

2A) How have your thinking and practice changed regarding cooperative learning?

Changes in planning and instruction. The majority of comments involved changes in instruction toward a more student-centered approach. The comments also reflected changes in teacher's thinking, planning, and development. They indicated a shift from teacher as information provider, to teacher as coach.

> "I am more flexible. At first I followed the rules, but now I adapt."

> "Now I have students evaluating and critiquing each other."

"I use more group learning than I did before."

"I teach with a much more hands-on approach."

"Over time, using cooperative learning creates opportunities for my thinking and practice to evolve (which is better than just changing them). I am better now at helping kids and they get better at solving their problems or preventing them."

"I use cooperative learning strategies for non-instructional tasks like cleaning up. I also use it to give students opportunities to succeed. The dilemma is setting standards vs. giving students the next step, so they can have small successes. It's attaining standards vs. making progress. I use cooperative learning for small successes and making progress."

"Cooperative learning skills make my job easier. Students begin to solve their own problems in groups, and start to use it in other situations. It has changed my approach to discipline, because the kids are more responsible."

"I am still covering content, but in a different way, with outcomes in addition to achievement. It encourages us to try things out. I feel more flexible as a teacher because of the Network."

Dick raised the question of the degree of fidelity of implementation and its effect on achievement. John responded that cooperative learning has to have three elements to affect achievement: 1) individual accountability; 2) a team working toward a common goal; and 3) a mechanism for low achieving students. Group work is not necessarily cooperative learning. Most of the issues for these teachers have revolved around making these three elements work in their classrooms.

New possibilities. For some, the Network served to expand their thinking toward the need for change and new possibilities. The importance of the Network as stimulation is indicated throughout the discussion questions.

> "Anything is possible. There is a realization that teaching and learning have to be revamped, that some restructuring has already occurred. Our concerns have broadened."

Tracking. The use of cooperative learning led to questions about tracking. While these questions first arose in the discussion group in relation to classroom practice, it became an even more significant issue later on in the discussion in regard to "best practice" and institutional change.

> "I needed to know the effects of cooperative learning on high-ability students. The researcher said that high-ability students have increased test scores with cooperative learning."

Increased knowledge and expertise. Teachers report becoming more knowledgeable, more experienced, and more creative in developing cooperative learning implementations.

> "I knew little about cooperative learning before the Network. Now I have knowledge, expertise, and a new program we developed."

Professional development. The nature of professional development, of learning to use cooperative learning, also changed.

> "We have teacher coaching of cooperative learning. It's a professional dialogue, not an evaluation."

2B) How has your participation in the Network community affected your thinking and practice?

Dialogue and reflection. Most often discussed was the contribution of the Network in facilitating professional dialogue and reflection. In part, this indicated assistance and problem-solving with current implementation efforts, but it also indicated an internalization of the notion of the teacher as a

reflective practitioner.

"Dialogue with colleagues."

"The conversations that were helpful included group size, monitoring and evaluation, unwilling or reluctant participants."

"I got Network support for how to form [cooperative learning] groups."

"It's hard to write your thought processes. I try to become aware of them and write them down."

"Reflection is important so that an intuitive art becomes and affects the science of practice."

"The role of the Network is to help people become more reflective."

"The Network has a dual function. One is conversation about current needs and concerns; the other is to stimulate broader thinking."

"The Network gets us to define what we're doing. Hearing from others broadens our teaching styles."

"I have changed through talking with [local] colleagues and the Network. I have no formal training in cooperative learning, just the Network plus dialogue, reading, and classroom experience. But the Network provides a place to talk and dialogue. It's only one factor, but an important one."

Ideas, information, and materials. Through the Network, practitioners received ideas, information, and materials that supported their change efforts. The issue was partly one of access, but, beyond that, the Network enabled more personalized and contextually-sensitive information.

"Research, researcher comments, and ideas."

"The Network has helped us reflect on the literature."

"Materials made a huge difference."

"We sought advice, sought information and ideas, and got support."

> "Topics discussed included assignment, team size, reference and instructional materials, creating environments conducive to cooperative learning, specific problems to beware of (bad curriculum, coasting), use in secondary schools, gifted and talented effects, and uses in special education (mainstreaming, LD, behaviorally impaired)."

Stimulation. For some, the Network contributed the stimulation needed to begin making changes in thinking and practice.

> "The Network provided the stimulation for changes in teaching techniques. I do less talking to students. The Network pushed me to new teaching, because I had to respond."

> "It challenges me. I need to rethink what I am doing."

> "It keeps spilling over. From cooperative learning, came questions about assessment, which led to issues of retention, which led to grading issues, which led to questions about the bell curve, which led to portfolio assessment, which led to broader issues about evidence of progress."

Support. Encouragement, support, and reinforcement also made a difference to Network participants. Again, it was not so much justification as positive support.

> "Encouragement!"

> "I get support."

> "It reinforces our current practices."

> "We got papers from the [Network] coordinator that reinforced current practice."

As a researcher, John also found reinforcement of current work and related learnings as an important result of Network participation.

> "It reinforces our research and development work. It has contributed a better knowledge of the problems of practice when it comes to use of innovations. It has forced me to expand my breadth and depth of knowledge regarding school organization and other topics."

3A) What has been the effect of cooperative learning on you, your institution, and your colleagues?

Many positive effects were reported including increased information, new ideas, discussion, research-practice connections, new approaches, greater use of cooperative learning, use of research to support initiatives, and researchers in schools. These were both instructionally and professionally significant.

Ideas and information.

"We have more cooperative learning information available."

"We discuss new ideas as well as the old struggles."

"We now get exposed to periodicals such as the Kappan."

"We like the new ideas."

Connections between research and practice.

"We connect research and teaching on cooperative learning."

"We have more dialogue around research."

"We brought a researcher to our school for the first time."

"We use the presentation of research for support."

"The problem is that the public doesn't trust teacher's knowledge. So teachers need research to support their practices."

New approaches.

"We now have a new Geography approach involving cooperative learning."

"Our discussion of interdisciplinary approaches was all stimulated by cooperative learning and the Network."

"We are starting to use portfolios."

Significant increases in cooperative learning.

"We use a lot more cooperative learning now."

"Most teachers now use cooperative learning to some extent."

Teachers feel supported.

"They feel good when their ideas are supported and there is a connection to resources."

Willingness to try new things.

"There is a willingness to try new things, although the schedule and tracking get in the way."

While the participants showed increased skill and comfort using cooperative learning in their classrooms, institutional issues remained more difficult. One issue involved the extent to which classroom practice can change without changing the whole school. The question was particularly acute in terms of tracking. While teachers chose to group students heterogeneously in their classrooms, the effect was limited when students were tracked into those classrooms. During our discussion, the issue broadened to how, in fact, do we change schools and how do we influence our peers? The discussion went like this:

"Perhaps nontracking will have to be mandated."

"But if it is mandated, there will be a negative reaction."

"Perhaps cooperative learning and the resulting heterogeneous grouping will spread contagiously."

"Or, perhaps cooperative learning will spread, but heterogeneous grouping will not. We have to undo the tracking mandate, because it's the right thing to do. Heterogeneous grouping IS the right thing to do for all students."

"Bell curve thinking is part of the problem. We need a paradigm shift."

"But change is threatening. I say, 'Come in and see cooperative learning.' And they say, 'Of course it works in social studies'."

"For changes to occur, a teacher with a vision decides cooperative learning will help the kids. She uses it, and others see it. It takes time, its a process."

"So, do we wait for consensus? A groundswell won't work unless the doers buy in. People have to be educated. Research, talking, planning, visiting. There are always movers and footdraggers. When educated, teachers will start."

"It's important to educate parents also. They want their 'A' kids tracked. Cooperative learning is a foot in the door."

"Cooperative learning can happen in classrooms, but its harder to change the whole school. The schedule is god. We're not cooperating ourselves as a faculty. Teachers need to use cooperative learning together as well as students."

The issue was how to change schools, how to spread cooperative learning and undo the tracking and scheduling that limit its effectiveness. These teachers agreed that mandates do not work. Instead, they were searching for ways to influence their peers and create a groundswell for change, yet several of them were not sure this would occur, or occur fast enough. The strategies they suggested included modeling, seed-planting, talking, using and sharing research, educating teachers and parents, and using cooperative learning with the adults in the schools as well as the students. At this point in the discussion, the most unresolved issue appeared to be how to affect school-wide changes in grouping that support new instructional practices within classrooms.

Ironically, at the same time, teachers were torn over allocating their time between improving classroom practice and improving the school.

"We change the school every year, and we are tired of committees. I want to be in my classroom."

Institutional issues that go beyond school buildings to school districts were also evident.

> "There are different philosophies between the middle school which is whole-student oriented and the high school which is content oriented. There is no carryover of cooperative learning from middle school to high school. We need to argue for a cooperative learning policy or commitment or institutionalization."

3B) What has been the effect of this interactive community on you, your institution, and your colleagues?

The participants discussed the effects of the Network in terms of increased teacher involvement, access to materials, informal discussion, and learning about the "other's" (researcher's or practitioner's) world.

Teacher involvement. While increased teacher involvement was a positive effect of the Network, it remained a challenge, as well.

> "I am still trying to get teachers to communicate on line."

> "It is difficult to get teachers to use it. Not a strong enough need is felt."

Materials.

> "The materials we received were important to restructuring the second grade reading program."

Informal discussions.

> "You hear it on the Network like you hear it in the lounge."

Learning about the other's world. The Network as an interactive community that influences both practitioners and researcher was evident.

> "It's been pleasant seeing the large number of reports from schools about their uses of cooperative learning, and especially their use of the processes I have a stake in disseminating. My personal regret (and relief!) is that I

have yet to work directly with a Network school on a cooperative learning project. The interaction has helped my colleagues maintain contacts with the reality of school change problems and classroom practice difficulties. It has contributed much craft knowledge to Center researchers. Sometimes I get discouraged. We've been doing cooperative learning research for 20 years. Is it making any difference? Regularly on the Network someone writes a description and its a lift and a reinforcement. It keeps cooperative learning in people's minds."

4A) How can the Network help you and your colleagues improve the use of cooperative learning?

By adding to the knowledge base.

"We can add to the sum of knowledge on cooperative learning. We can do action research. We will examine the effect of cooperative learning groupings and language acquisition. Does cooperative learning effect the rate of language acquisition?"

By sharing curriculum units.

"I'd like to see more examples of complete units that have been done, including evaluation criteria."

By describing theory-into-practice.

"Descriptions of how teachers got to the practical stuff from the theory. Teachers need to do this, but the obstacle is time."

Through teacher input into research.

"The Network could provide input on current cooperative learning projects being carried out and planned by our Center. I would need to provide objectives and descriptions, and solicit reactions. We could possibly work on collaborative action research projects."

Through coaching.

"After a cooperative learning workshop, you use it or lose it. Learn model, use it, then discuss it. Then get some coaching. The Network helps with this."

Through seed-planting.

"When you use cooperative learning, seeds are planted. Once others see it, they may come back to it."

Through broader dissemination.

"The Network has great potential for dissemination. There is a high incidence of cooperative learning in Baltimore, because it spreads from the institution. The Network potentially spreads it further than R & D centers."

Through use of the Network as a research tool.

"We could have a focus group where we test cooperative learning in kindergarten and lower grades, using the Network as a research tool."

The discussion group participants saw a broad range of Network uses that both improve practice and contribute to the wider professional community. There was an emphasis on research which included us of the Network to affect research agendas, to conduct action research, and to further theory-into-practice connections. They view the Network as a tool for professional development and for stimulating change. These views of the Network's role and potential were very different from the first year when the Network was viewed almost solely as an information source (Castle, Livingston, Trafton, & Obermeyer, 1990). Their view of the Network's purpose and potential has broadened considerably through their experience with it.

2B) How can the researcher-practitioner community be strengthened?

Most comments dealt with teacher involvement and participation (26 comments), the nature of interactions (25 comments), and processes and content (17 comments).

Teacher involvement. This category included suggestions such as increasing participation, creating a sense of need,

improving the effectiveness of the local coordinator, and addressing the problem of time.

The need for increased involvement included comments such as:

"Do we see the Network as an information source or as conversation? The view determines involvement."

"I am still trying to get teachers to communicate on line."

"It is difficult to get teachers to use it, if a strong need is not felt."

"The problem is getting more teachers on-line."

"I want to train more people on-site to use the Network. My goal was to get everyone on. This year there is less involvement and more guilt. The six good users will be mentors."

"I want more secondary teachers talking."

"A buddy system within schools or between schools might help."

The group had an interesting discussion of the reasons why, indeed, teachers need the Network. It proceeded as follows:

"What is going to make people need it?"

"Mindfulness of a larger profession beyond the individual and school."

"I don't need it to teach, but I need it to teach better."

"The available resources."

"The research connection."

"Isolation to stimulation. Once you get hooked, the isolation ends."

"I need it to get out of my rut."

"The need for dialogue around invention in the classroom."

"The realization that you have a lot to offer."

One of the most common dilemmas around school restructuring is finding the time for professional, collaborative efforts:

> "Time. It's not a high enough priority."
>
> "We need to build time into the workday to use the Network."
>
> "We need time. Professional time, common time, professional development time (we can use research to justify it), a year-round job."
>
> "Time is the biggest problem. Our consultant will help in terms of time, training, and reflection."

The role of the school-based Network coordinator has been a nebulas one, yet it is critical to what happens at the school in relation to the Network (Watts & Castle, 1992):

> "The Network is dependent on people who know how to use it. As Coordinator, my biggest mistake was trying to run the Network for everyone. I should have insisted they use it, too. It became too voluminous a task. They needed hands-on experience before they learned to depend on me. As Coordinator, you have to create a need, get them hooked, then show how to send and check for responses. Then check to make sure they are checking. The other problem with dependency is that if the person leaves, there is no one."
>
> "A part-time [paid] coordinator helps, as do bulletin board, binders, and awards to contributors."
>
> "The coordinator asked me to write up my cooperative learning and science curriculum on Network. She's a major influence."

Interaction. These comments focused around sharing and challenging each other, along with some concrete suggestions.

These participants called for more challenging and questioning of each other on the Network. This is interesting in that both researchers and practitioners have reported previously that they were unsure who to push and how much to push (Castle, McClure, & Gillingham, 1991). On the other hand, "agreeing to disagree" has been observed as a turning point for several

schools involved in the change process (Livingston & Castle, 1992). The participants appeared to define an additional change strategy as challenging and pushing their colleagues to look critically at current practices. Here are representative comments:

> "We have to get over the niceness norm. The teachers have to be more feisty and critical. We need norms of questioning, norms of inquiry. We have to agree to disagree."
>
> "I need for you [the researchers] to stimulate me and respond to me. Don't let me get lazy. Make me follow-up."
>
> "We need a shared language PLUS getting to the point of not tolerating bad practice. There is good practice and bad practice, such as tracking. We CAN'T justify tracking, yet we continue to do it."
>
> "The role of the Network is to look at hard questions, to challenge, to push."
>
> "Start asking hard questions like tracking and weighting. How is heterogeneous grouping set up? We need to see a real example."
>
> "Move beyond excuses. 'It won't work' doesn't get much attention on this Network."

Professional reflection through shared language and support was viewed as strengthening the community:

> "It is so nice to tap into other practitioners and the research. I have the world of education at my fingertips."
>
> "We could be more reflective and get people to discuss their thinking processes."
>
> "Teachers are professionals and need a shared language. Professional and shared language are not promoted enough. The Network is important here."
>
> "We should have shared our CIRC use on the Network. We have a responsibility to contribute, and the Network broke down, because we didn't share it."
>
> "The researchers should keep referring to documents, books, articles, and research reviews."

"Remember that we are going against strong norms of not talking about our teaching or giving advice. We must think of ourselves as sharing rather than boasting, assisting not telling or bragging."

"Don't worry about imperfect writing and spelling. The Network has done well in establishing this informal language and writing. It is professional sharing, personalized sharing."

"We need to develop structures that force more depth of communication."

"A professional makes decisions based on knowledge between effective and ineffective practice."

"Is there an ideology norm on the Network? Is there a difference between professional dialogue and personal opinion? We need to put the norms out on the Network. They need to be verbalized and discussed."

"It is important to be willing to see issues from several perspectives. We can't have a discussion unless there is openness to other perspectives."

"We can improve the Network through active conversations."

"The researchers are great in that they respond quickly to questions."

Processes and content. These comments had to do with conducting action research, theory-into-practice issues, descriptions of practice, dialogue around implementation issues, the nature of the database, and the inclusion of multicultural issues.

"We can do action research, field testing some of the cooperative learning research."

"Use [electronic learning circles] for research."

"Collaboration on action research projects."

"Have focus groups, such as cooperative learning in kindergarten and the lower grades. Use the Network as a research tool."

"Use the focus group idea for simple action research projects."

"Use the Network to understand research processes."

"Translating theory into practice is still an issue."

"Don't think in terms of theory VERSUS practice, but theory AND practice. Each has to be interested in the other. Each person has to do some of each."

"Promote dialogue around invention. The ideas are new and not researched. It needs to surface. Move from research to invention to dialogue."

"Share materials that can be sent, PLUS your experience using them."

"Is there a danger of thinking this database is it? On this Network, no. But to the outside, yes. We're not recreating a library. The information on the Network is specific and situational. And it includes descriptions of practice."

"Push multicultural issues."

Meetings. Seven comments were made about the important role of face-to-face interactions in strengthening the Network:

"Have regular conferences on Network use."

"Have regular meetings to generate issues, such as developmentally appropriate cooperative learning."

"Knowing people face-to-face helps."

"At the symposium in Colorado Springs, we really became a team."

"Have regional meetings to make connections."

"Meet and talk so that barriers and ivory tower perceptions diminish."

Database management. Three comments were made related to strategies for searching the ever-growing database.

"Titles could be less ambiguous."

"Use better titles."

"Have a catalogue of curriculum units."

Suggestions. Additional suggestions included:

"Have a Poster of the Week with current questions in big letters."

"Send notes of appreciation. We should thank others for sharing."

Network Papers: Practitioners' Implementation Issues

A review of cooperative learning papers written on the Network over the last three years produced several observations related to the concerns of the teacher participants. Whereas the discussion group reported issues from the seven participants, this analysis included all of the Network schools that had contributed to the cooperative learning session, thus adding a cross-Network perspective.

1. Seldom have teachers on the Network asked to examine the research that supports the use of cooperative learning. Network teachers seem to accept on faith that the research exists and that cooperative learning has been shown to work. Similarly, there are few instances on the Network of conversations where teachers have described their own action research in regard to cooperative learning, although a bit of this occurred during the discussion group. Perhaps implementation problems and the "how-to" of cooperative learning have been more pressing daily issues and have, therefore, received more written attention on the Network. The importance they assign to research and their desire to use the Network as an action research tool were evident in the discussion group.

2. Conversations on the Network have revolved around the activities and task structures associated with cooperative learning and curriculum. For instance:

o Group membership. Considerable conversation has revolved around the best way to set up groups and determine group membership. Researchers and teachers have consistently pointed out the importance of using heterogeneous groups. However, numerous points of view have been expressed about membership and how often group membership should be changed. The advice that some Network teachers have given is that it really does not make that much difference; that each teacher has to find what works best in their situation.

o Student behavior in groups. When teachers start using cooperative learning and start talking about it on the Network, the behavior of students is often a topic of concern. Two types of student behavior have generated the most conversation: What to do with the dominating student and what to do with the freeloader. Group work, particularly when students are experiencing it for the first time, creates opportunities for particular students to either exert a great deal of interpersonal influence or avoid it altogether. Equalizing the influence patterns among group members is an issue teachers strive to resolve. Most cooperative learning approaches recommend the use of cooperative reward structures where students are given grades or other types of rewards for collective as opposed to individual action.

o Developmentally appropriate use of cooperative learning. Ongoing conversations have occurred on the Network as teachers strive to determine when cooperative learning is best suited to various ages and grade-levels. Papers have described how cooperative learning has worked (and not worked) in elementary, middle school, and high school classes. One recent paper described one teacher's experience comparing cooperative learning in first and second grades.

o Curriculum. Teachers on the Network have been perplexed and often troubled by the curriculum dilemmas raised by the use of cooperative learning. On the one hand, they know that group work takes more time and that "coverage" in the strictest sense becomes problematic, yet they know the benefits for students in terms of achievement and social outcomes. At the same time, they know that recitation teaching is the more speedy way to cover materials, coverage which is often specified by a higher authority. Again, as with tracking, teachers are caught between doing what is best for students and significantly restructuring the institutional barriers that limit them.

Conclusion

It is clear that the use of cooperative learning in participating schools has increased over the last four years and that general changes in instruction have occurred toward more active, student-centered activity. Teachers' knowledge and expertise about cooperative learning have also increased. Issues important to the Network teachers have been: developmentally appropriate implementation, formation of cooperative learning

groups, unequal influence of group members, rewards and assessment, and curriculum coverage. The use of cooperative learning has led participants to consider broader issues of student assessment, tracking, and the relationship between institutional change and classroom change. Very prominent in the discussion group is a concern for and agreement on the need to detrack schools, yet how to do so remains problematic for the teachers.

Changes in teacher professionalism are also evident. The teachers described themselves as becoming more flexible and using more professional judgment. They speak of improving their own practice as a process of learning, questioning, dialoguing, and coaching. They have come to value research, to ask questions about theory and practice connections, and to see action research as an avenue for improvement.

The continuing growth and development of the Network appears to involve several initiatives. First, continuation of efforts to increase teacher involvement at the local level. Second, development of structures and processes for use of the Network as a research tool. Third, "agreeing to disagree" and encouragement of challenging, critical Network dialogue. Fourth, encouragement of reflection on practice. Finally, provision of face-to-face interactions.

Listening to the dialogue and watching the implementation of cooperative learning in Network schools provides new insights for the research and knowledge utilization communities. It shows how

dissemination can be successful, as contrasted to the many documented instances of failure.

For instance, for a good many years (most of the twentieth century, in fact), educational reformers have strived to make classrooms more student-centered, and to get teaches to abandon large-group, didactic-recitation forms of teaching in favor of small group, inquiry-oriented methods. Early theorists and reformers such as Dewey (1916) and, later, Thelan (1954; 1962) emphasized the social skills and understandings that would be learned through group work and small group teaching. To them, having students organized into groups for the purpose of pursuing lessons together more closely reflected the way work is done in the adult world. Group work and student exchange thus mirrored human interaction as found in the larger society and provided a setting for teachers to model and teach the requisite civic skills required of adults in a democracy.

At mid-century, small group teaching and "hands-on" methods were emphasized in several of the major curriculum reform projects of the post-Sputnik era. These approaches were best reflected in some of the science curriculum projects such as EESI and various innovative social studies curricula such as *Man: A Course of Study*.

In the past decade, small group teaching methods, now more often called cooperative learning, have been embraced by a spate of theorists and reformers and these approaches have been advocated by almost all professional organizations.

Small group teaching and cooperative learning methods have not only had the support of reform-minded educators who want to see less teacher-centered instruction, these approaches to teaching have also been subjected to very careful scrutiny by the educational research and development community. Over the past two decades, a rather impressive research base has been accumulated that demonstrates the efficacy of cooperative learning.

What is interesting and provocative about all this is that, since the turn of the century many theorists, curriculum reformers, and teacher leaders and their professional organizations have endorsed small group teaching and cooperative learning. Also, over the past 20 years, a massive amount of evidence has accumulated from hundreds of studies conducted in all parts of the world and in all most all grade levels and subject areas, pointing to the ppsitive effects of cooperative learning and its superiority over recitation or frontal teaching. Yet, those that study classroom teaching observe that large-group, recitation teaching persists. For instance, Larry Cuban (1984; 1992) argues, with impressive historical evidence, that most aspects of teaching (the ratio of teacher-to-student talk; the use of groups, interest centers, and classroom space; and the opportunity for student movement) have not changed significantly since the turn of the century. When John Goodlad visited hundreds of schools in the United States in the early 1980s, he reported finding only pedagogical conformity: teachers lecturing and asking questions, and students listening. More recently,

Courtney Cazden (1980) has made the same observation, as have Richard and Patricia Schmuck. In 1989, the Schmucks visited 25 rural school districts in 21 states and observed over 30 high school classrooms. They reported that, in the classrooms they visited, teachers were observed talking to the whole group of students over three-fourths of the time. They observed students talking in pairs only twice and in small groups only four times.

The School Renewal Network provides a paradigm for dissemination that is vastly different from the traditional knowledge utilization and dissemination models. The successful implementation results of cooperative learning in Network schools, as compared to school studied by others, is quite likely a product of teachers getting quick access to knowledge and resources, the application of theory and research findings that are personalized and contextually appropriate, and assistance with current implementation problems. The absence of these factors is problematic in the traditional dissemination paradigm. The Network has enabled its users to reconstruct knowledge and research about cooperative learning in practical settings through collegial dialogue and mutual support.

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